NOTIFICATION OF COMPLIANCE STATUS REPORT
40 CFR PART 63 SUBPART FFFF
3V INC.
APRIL 2011 REVISION

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1. INTRODUCTION

3V Inc. is subject to the Miscellaneous Organic NESHAP 40 CFR Part 63 Subpart FFFF for organic chemical manufacturing processes in unit ID's 04, 05, 06 and 07. The facility is also subject to the Pharmaceutical MACT 40 CFR Part 63 Subpart GGG in unit ID 04. The purpose of this notification is to document the facility's status with compliance with Subpart FFFF.

The facility consists of batch chemical manufacturing process units, wastewater treatment units, storage tanks, and air pollution control equipment for the reduction of organic HAP's including: two thermal oxidizer units (68H001 and 68H002) and one vapor absorber recovery system (04C401 and 04C402). There are no continuous process sources.

The affected source includes the following MCPU's.

Table 1. Affected Source

MCPU	Chemical Manufacturing Processes
04 – Alpha/Beta/Epsilon Plant	Efram CR, Elphos ET, Extrapin, Luxus 1, Luxus 2 from Luxus 5, Luxus 5, Tabanol 5, Tabanol NA, Unox 3 and 51MT production.
05 – Gamma Plant	Tabanol 5
06 – Delta 1 Plant	Efram CR, Tabanol 1 and Tabanol 2
07 – Delta 2 Plant	Tabanol 5

2. SECTION BY SECTION REVIEW OF COMPLIANCE METHODS

63.2455 Compliance with continuous process vent provisions.
There are no continuous production processes at the facility. All products are produced from batch processes.

63.2460 Compliance with batch process vent provisions.

The facility operates a batch production facility. All products are produced from batch processes.

The following table lists the equipment used in each process, the uncontrolled HAP emissions rate and the group status for the batch process vents.

Table 2. Specific Process Equipment Used In Each Process With HAP Emissions

MCPU	Process	Equipment	HAP E., tpy	Group
04	Efram CR	02R210, 02VA210	4.35	2
04	Elphos ET	03R301, 03V313A, 02TK111, 03VA310, 03FP301, 03FP303, 03D301, 03V322, 05V575, 05V576, 05C503, 05V576, 05VA534, 05C505, 05V579, 05V580	Designated[1]	1
04	Elphos ET MeCl	03R301, 03V380, 03R305, 02R151, 03SE301, 03V313B, 03V324A, 03V323,	0.2	2

	vents	04V432, 05C504, 05V577, 05V578		
04	Extrapin	02R102, 03VA351, 02R151, 03SE302	1.9	2
04	Luxus 1	03VA307, 03R302A, 03R305, 03SE301, 03FP303, 03D301, 03R301, 05VA534, 05V579, 05C505, 05V580	Designated	1
04	Luxus 2 from Luxus 5	03R302B, 03R307, 03R304, 03R306/C307	Designated	1
04	Luxus 5	03R307, 03R302B, 03FP301, 02D130, 03V358, 02VA122, 03VA305, 03FP305, 01CE01, 01CE02	0.2	2
04	Tabanol 5	03R350, 02D130, 02D131, 03V352	0.2	2
04	Tabanol NA	02R151, 02D131, 03V375, 03C305, 03V376	Designated	1
04	Unox 3	03R308, 03R306, 05V579, 05V580, 05C505	1.0	2
04	51MT	05C504, 05V577, 05V578	Designated	1
05	Tabanol 5	04R402, 04R403, 04R406, 04D401, 04D402, 04D405, 04D406	0.7	2
06	Efram CR Tabanol 2	05R520, 05R521, 05R523, 05VA524, 05V542, 05V543, 05V563, 05R522, 05VA522, 05VA525, 05VA526	Designated	1
07	Tabanol 5	05R501, 05R502, 05R503, 05D501, 05D502, 05D503, 05V504, 05V506, 05V512	0.4	2
Note 1: Processes designated as group 1 in accordance with 63.2460(b)(5). All group 1 vents routed to a control device.				

The following table lists the control options available to the facility to comply with the emission reduction requirements of Table 2 of Subpart FFFF.

Table 3. MACT Control Device Description

Device ID	Type of Device	Function	Performance Results
68H001	Ground flare	Control device	>99.9%
68H002	Thermal oxidizer	Control device	>99.9%

The thermal oxidizer (68H002) is used to reduce emissions of non-halogenated vent streams. Ground flare (68H001) is used as a back up for malfunctions and scheduled downtime.

63.2465 Compliance with hydrogen halide and halogen HAP or HAP metals from process vents provisions.

There are no MON process vents that emit hydrogen halide and halogen HAP or HAP metals at the facility.

63.2470 Compliance with the storage tank provisions.

The facility consists of the following storage tanks by MCPU.

Table 4. Storage tanks by MCPU

MCPU	Tank ID
04 – Alpha/Beta/Epsilon Plant	02TK111, 02TK210, 02TK251, 02TK255, 02TK256, 03TK301, 03TK305b, 03TK311, 03TK338, 03TK382, 03V309, 03V310, 03V322, 03V323, 03V324A, 03V324B, 03V370, 03V432, 05TK513
05 – Gamma Plant	02TK206, 03TK361B, 04TK410, 04TK411
06 – Delta 1 Plant	02TK102, 02TK103, 02TK104, 02TK254, 05TK505, 05TK507, 05TK514, 05TK515,
07 – Delta 2 Plant	05TK501, 05TK516, 05TK519

The following table provides details to identify group status of each tank listed above.

Table 5. Storage Tank Group Status Details

Tank ID	Size, gals	Process	HAP Constituent	MTVP, mm Hg	Group Status
02TK102	20,000	Tabanol 1, Tabanol 2	Methanol	140	1
02TK103	47,000	Tabanol 1	Methanol	125	1
02TK104	19,430	Efram CR	Vinyl acetate	116	1
02TK210	19,000	Luxus 5	Methylene chloride	463	1
02TK250	47,000	Tabanol 2	Methanol	16	2
02TK251	47,000	Luxus 1, Luxus 2 Recovery from Luxus 5	Xylene	9	2
02TK252	47,000	Tabanol 5	Acrylic acid	3	2
02TK254	19,000	Tabanol 2	Methanol	97	1
02TK253	3,000	Tabanol 2	Methanol	97	2
02TK255	19,000	Tabanol 1	Methanol	140	1
02TK256	19,000	51MT Production	Methanol	63	1
03TK301	19,000	51MT Production	Methanol	51.8	1
03TK305b	15,000	Extrapin	Ethyl acrylate	32	2
03TK310	17,800	Tabanol 2	Methanol	97	1
03TK311	18,000	Unox 3	Allyl chloride	192	1
03TK338	19,800	Luxus 5	Methylene chloride	463	1
03TK361b	44,000	Tabanol 5	Acrylic acid	3	2
03TK370	17,800	Idle Process	N,N - Dimethylformamide	4.6	2
03TK382	19,000	Elphos ET	Methylene chloride	463	1
03V309	17,800	Elphos ET, Tabanol NA	Methanol	140	1
03V310	17,800	Elphos ET, Tabanol NA	Methanol	140	1
03V322	18,600	Elphos ET	Methanol	140	1
03V323	18,600	Elphos ET	Methylene chloride	463	1

03V324A	12,900	Luxus 1	Xylene	9	2
03V324A	12,900	Elphos ET	Methylene chloride	463	1
03V324B	12,900	Luxus 1, Luxus 2 Recovery from Luxus 5	Xylene	9	2
03V358	19,342	Luxus 5	Methylene chloride	463	1
03V369	17,800	Waste	Methanol	97	1
03V370	17,800	Luxus 1	Benzotrichloride	0.3	2
03V381	17,800	Tabanol 2	Methanol	97	1
03V432	11,240	Elphos ET, Luxus 5, Tabanol 5	Methylene chloride	463	1
04TK410	20,000	Tabanol 5	Acrylic acid	3	2
04TK411	23,300	Tabanol 5	Methylene chloride	463	1
04TK431	21,300	Algor NN, Algor LM	Aniline	0.8	2
05TK501	8,600	Tabanol 5	Acrylic acid	3	2
05TK505	16,100	Tabanol 1	Methanol	117	1
05TK507	11,250	Efram CR	Acetaldehyde	463	1
05TK513	18,200	51MT Production	Methanol	140	1
05TK514	14,000	Tabanol 2	Methanol	16	2
05TK515	14,000	Tabanol 2	Methanol	16	2
05TK516	10,400	Tabanol 5	Acrylic acid	3	2
05TK519	23,300	Tabanol 5	Methylene chloride	463	1

The following table lists the method compliance for each group 1 storage tank.

Table 6. Group 1 Storage Tank Compliance Method

Tank ID	HAP Constituent	Method of Compliance
02TK102	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
02TK103	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
02TK104	Vinyl acetate	Reduce HAP ≥95% by venting to 68H001/68H002
02TK210	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02
02TK254	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
02TK255	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
02TK256	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03TK301	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03TK310	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03TK311	Allyl chloride	Pressure vessel designed > 15 psig w/ no emissions
03TK338	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02
03TK382	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02
03V309	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03V310	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03V322	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03V323	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02
03V324A	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02
03V358	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02
03V369	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
03V381	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002

03V432	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02
04TK411	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02
05TK505	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
05TK507	Acetaldehyde	Pressure vessel designed > 15 psig w/ no emissions; during tanker unloading vented to 68H001/68H002.
05TK513	Methanol	Reduce HAP ≥95% by venting to 68H001/68H002
05TK519	Methylene chloride	Reduce HAP ≥95% by venting to 01CE01/01CE02

63.2475 Compliance with transfer rack provisions. The products manufactured on site that contain a HAP are Tabanol 1 and Tabanol 2. The HAP is methanol. The table below lists the transfer racks by storage tank identification and the relevant information to determine group status. The facility does not operate any Group 1 transfer racks. Details are provided in the table below.

Table 7. Transfer rack Information

MCPU	Transfer Rack	Product	Rack wtd partial pressure, psia	Annual qty, L	Group Status
06 – Delta 1 Plant	03TK103	Tabanol 1	2.26	493,300	2
06 – Delta 1 Plant	05TK505	Tabanol 1	2.26	600,000	2
06 – Delta 1 Plant	02TK250	Tabanol 2	0.3	2,240,000	2
06 – Delta 1 Plant	05TK515	Tabanol 2	0.3	534,000	2

63.2480 Compliance with the equipment leak provisions. The facility has selected to comply with Part 63 Subpart UU for all Subpart FFFF processes at the facility. Additional information is provided Section 3(vi) and (vii) of this report.

63.2485 Compliance methods for wastewater provisions. Both Group 1 and Group 2 wastewaters are generated in the Elphos ET, Luxus 1 and Luxus 5 processes. The wastes from these processes are collected in 03V321, 03V326, 04V440, 04V441 and 05TK510. Wastewaters from these tanks are transferred to 05V584 where they are sampled after each transfer and tested to determine the concentration of partially soluble HAP (PSHAP) and soluble HAP to determined group status. Wastewaters that are Group 1 for PSHAP are then transferred to 03C303 steam stripper to reduce the concentration of PSHAPS below the group 1 definition. Wastewater after stripping in 03C303 is transferred to 05V586 where they are sampled again and tested to determine concentration of HAP's. For PSHAP constituents, two control options are exercised with this unit. The first is the 50-ppmw concentration option of 63.138(b)(1). Any wastewaters exiting the stripper and collected in 05V586 that do not meet to 50 ppmw limit are then subjected to the "one megagram total source mass flow rate option" of 63.138(i)(2) for partially

treated Group 1 wastewaters. The wastewater streams included in this option include:

- Wastewaters from the Luxus 1 process.
- Wastewaters from Luxus 2 recovered from Luxus 5 process.
- Wastewater from Luxus 5 process.
- Wastewaters from Regal 2B and its intermediates processes. Note this process is subject to 40 CFR Part 63 Subpart GGG.

All wastewaters exiting the stripper and all Group 2 wastewaters are treated in the facility biological treatment plant.

There are no Group 1 wastewaters for soluble HAP (SHAP) currently at the facility. The concentration of SHAP is > 50 ppm exiting 03C303. As a result, for SHAP constituents, a separate compliance option will be exercised in accordance with the provisions of 63.2485(n) and 63.145(h). Supporting documentation is provided in Attachment H.

Table 8. MON Wastewater Tank Compliance Information

Tank ID	Tank Volume, gal	Compliance Option for Group 1 Wastewaters
03V321	18,600	Fixed roof per 63.133(a)(1)
03V326	17,800	Fixed roof per 63.133(a)(1)
04V440	13,000	Fixed roof per 63.133(a)(1)
04V441	13,000	Fixed roof per 63.133(a)(1)
05TK510	18,600	Fixed roof per 63.133(a)(1)
05V584	17,800	Fixed roof per 63.133(a)(1)
05V586	14,100	Fixed roof per 63.133(a)(1)

63.2490 Compliance methods for heat exchange systems. The facility operates a cooling tower for cooling process equipment with heat exchangers. The facility complies with 63.104(a)(1) requiring the cooling water pressure be maintained at least 35 kPa (5 psi) above the HAP containing process side of the exchanger.

3. SPECIFIC INFORMATION REQUESTED BY 63.2520(d)(2)

i) Results of applicability determinations, emissions calculations, or analyses used to identify and quantify HAP usage or emissions from affected source.

Results of applicability determinations. The facility is a major source for Hazardous Air Pollutants and manufactures organic chemicals in SIC 286. As a result the facility is subject to Subpart FFFF. A list of MCPU's and processes has been provided in the introductory section of this NOCS report.

On May 30, 2008 the US EPA responded to an applicability determination submitted by the facility on April 17, 2008 requesting the use of a condenser as a recovery device for compliance with the batch process vent emission reduction provisions of the regulations. The EPA denied that request for the reasons stated therein. The facility had requested to replace an existing absorber used as a recovery device with

a more efficient condenser. The facility has chosen to comply with the group 1 batch process vent emission reduction requirements with the existing absorber unit and has abandoned its plans to purchase and replace the absorber with a condenser and is studying a method to eliminate the HAP from its processes.

The US EPA issued a letter to the facility on February 17, 2007 in response to a request for an alternative monitoring method on a hydrogen chloride vent stream scrubber that was made in a Precompliance Report submitted by the facility on November 8, 2007. During that period, the facility was producing Luxus 5 by a process that generated hydrogen chloride gas as a reaction byproduct. That process has since been modified to eliminate the reaction causing the hydrogen chloride gas byproduct stream. Since there are no other Subpart FFFF processes that generate hydrogen chloride vent streams, this request becomes irrelevant.

Emission calculations or analyses used to identify or quantify HAP emissions. Results of emissions calculations necessary to determine group status for each group 2 process are provided by copy in Attachment A. All group 1 processes have been designated and calculations are not required.

(ii) The results of emissions profiles, performance tests, engineering analyses, design evaluations, flare compliance assessments, inspections and repairs, and calculations used to demonstrate initial compliance according to §§63.2455 through 63.2485. For performance tests, results must include descriptions of sampling and analysis procedures and quality assurance procedures.

Performance tests were conducted on the separate emission reduction devices to demonstrate compliance with 63.2460 and 2470 (batch process vents and storage tanks). A test was conducted on June 18, 2008 on thermal oxidizer 68H002. That test demonstrated that the thermal oxidizer reduced organic HAP emissions by 99.986%. The emissions profiles used to plan the test are provided in Attachment B.

A performance test was conducted on the ground flare 68H001 on August 12, 2003. The test report was submitted on November 25, 2003 in the NOCS report for the Regal 2B process.

A design evaluation for the use of the cryogenic condenser to reduce emissions from Group 1 storage tanks has been completed and is provided in Attachment D. Since the venting of the storage tanks is commingled with the venting from methylene chloride process vents, the design evaluation was done for the full loading on the condensers and not just from the storage tanks.

A design evaluation for the steam stripper 03C303 has been conducted. The design evaluation is provided in Attachment E. The residuals from the steam stripper are routed to 03V369 for eventual treatment offsite in a RCRA permitted combustion device. Alternatively, during Elphos ET production campaigns, the residuals are recycled to 03V432 for reuse in the Elphos ET process.

(iii) Descriptions of monitoring devices, monitoring frequencies, and the operating limits established during the initial compliance demonstrations, including data and calculations to support the levels you establish.

The following table lists the monitoring devices and limits established during the performance tests for the thermal oxidizer, 68H002, and the C401 and C402 absorber system.

Table 9. Parametric Monitoring Required for Control Devices

Device	Parameter	Basis For Parameter	Limit	Basis for Limit
68H002	Combustion Temperature	63.988(c)(1)	1476 °F	Average temperature from test

(v) All operating scenarios.

All operating scenarios for the processes listed in Table 2 are listed in Attachment F.

(vi) Identification of parts of the affected source subject to overlapping requirements described in §63.2535 and the authority under which you will comply.

Table 10. Identification of Parts of Source Subject to Overlapping Requirements.

Overlapping Requirements	Process	Authority under which facility will comply
63.1256 & 63.2485	All wastewaters from Regal 2B & its intermediates processes	63.2485

(vii) The information specified in §63.1039(a)(1) through (3) for each process subject to the work practice standards for equipment leaks in Table 6 to this subpart. See Attachment G for the information required. There are no units subject to the alternative work practice standard of 63.1037 at the facility.

(viii) Identify storage tanks for which you are complying with the vapor balancing alternative in §63.2470(e).

There are no storage tanks at the facility for which the facility uses the vapor balancing alternative for the requirements of 63.2470.

(ix) Records as specified in §63.2535(l)(1) through (3) of process units used to create a PUG and calculations of the initial primary product of the PUG.

No PUG's created for this facility.

ATTACHMENT A
Emission Calculations

Emission calculations are provided for the following processes:

- Efram CR
- Extrapin
- Unox 3.

ATTACHMENT B
Emission Profiles For Thermal Oxidizer

ATTACHMENT C
Thermal Oxidizer Performance Test Report

ATTACHMENT D
Cryogenic Condenser Design Evaluation

The storage tanks 02TK338, 03TK210, 03TK382, 03V323, 03V324A, 03V358, 03V432, 04TK411, and 05TK519 are group 1 storage tanks. These tanks will also be connected to the cryogenic condensation system. For group 1 storage tanks, the facility will comply with the 95% reduction requirement.

The design evaluation was completed using process simulation software, HYSIS, under full ooad conditions including process vent as well storage tank emissions. Attached is the HYSIS simulation printout. It includes the material balance for methylene chloride when operated at the −130 °F condition or less. In that simulation, the mass flow rate of methylene chloride in is 379 lb/hr and the outlet flow is 0.7 lb/hr. The % reduction is 99.8%. Under these conditions the reduction requirement for Group 1 storage tanks is met.

ATTACHMENT E
Design Evaluation For Steam Stripper 03C303

Process simulation software was used to confirm that the methylene chloride concentration in the wastewater stream will be reduced below 50 ppmw in accordance with 63.138(b)(1). It will no longer be a Group 1 wastewater at this concentration. Attached is a printout of the simulation showing the process streams to and from the stripper as well as the methylene chloride concentration in each stream.

Condenser 04E405 has been rated to determine if it is designed to condense all of the solvent that is evaporated in the stripper as well as the steam supplied. That calculation is attached as well.

The retrofitted column meets most of the specifications for a design steam stripper in accordance with 40CFR63.138(d). The only parameter that comes into question is the requirement for 10 actual trays. 03C303 is a packed column and does not have actual trays. The number of theoretical trays is expected to be at least 10. The following table provides the relevant specifications.

Parameter	**40CFR63.138(d)**	**03C303**
Minimum active column ht	5 meters	8.5 meters
Flow arrangement	countercurrent	countercurrent
Actual trays	10	Packed column – 10 theoretical
Steam to feed ratio	0.04 kg/L	0.04 kg/L
Minimum column temperature	95 °C	95 °C
Maximum liquid loading	67,100 L/hr/m2	9,331 L/hr/m2
Operating pressure	nominal atmospheric	nominal atmospheric

ATTACHMENT F
Operating Scenarios

MCPU	Process	Equip ID	Use	Category	Control Device
04	Efram CR	02R210	Reactor	Process Eq.	68H002
		02VA210	Mixing vessel	Process Eq.	68H002
		02V212	Weigh vessel	Process Eq.	68H002
		02V213	02K210 Vessel	Process Eq.	68H002
		02V215	Charge vessel	Process Eq.	68H002
	Ephos ET	03R301	Reactor- when charging methanol	Process Eq.	68H002
		03R301	Reactor- when charging methylene chloride	Process Eq.	N/A[1]
		03V380	Accumulator	Process Eq.	N/A[1]
		03R305	Reactor	Process Eq.	N/A[1]
		03R150	Spent acid vessel	Process Eq.	N/A[1]
		03VA305	Neutralization vessel	Process Eq.	N/A[1]
		03FP305	WW Filtration	Process Eq.	No emissions
		03SE301	Distillation & mixing	Process Eq.	N/A[1]
		03V313B	Accumulation vessel	Process Eq.	N/A[1]
		03VA310	Mixing vessel	Process Eq.	68H002
		03FP303	Product filtration	Process Eq.	68H002
		03D301	Drying	Process Eq.	68H002
		05V575 & 05V576	135M Recovery	Process Eq	68H002
		05VA534 & 05C503	135M Recovery	Process Eq	68H002
		03V375& 03V376	259CM Recovery	Process Eq	N/A[1]
		03C305	259CM recovery	Process Eq	N/A[1]
		05V579 & 05V580	135M Recovery	Process Eq	68H002
		05C505	135M Recovery	Process Eq	68H002
		02TK111	135M Extract	Storage tank	68H002
		03V322	Distilled 135M	Storage tank	68H002
		03V323	259CM Recovery	Storage tank	01CE01/01CE02
		03V324A	259CM Recovery	Storage tank	01CE01/01CE02
		04V440	Wastewater	Storage	N.R.

				tank	
		04V441	Wastewater	Storage tank	N.R.
04	Extrapin	02R102	Reaction	Process Eq	N.R.
		03VA351	Mixing vessel	Process Eq	N.R.
		02R151	Reaction	Process Eq	N.R.
		03SE302	Mixing vessel	Process Eq	N.R.
04	Luxus 1	03VA307	Mixing vessel	Process Eq	68H001/68H002
		03R302A	Reaction	Process Eq	68H001/68H002
		03R305	Purification	Process Eq	68H001/68H002
		03SE301	Crystallization	Process Eq	68H001/68H002
		03FP303	Filtration	Process Eq	68H001/68H002
		03D301	Drying	Process Eq	68H001/68H002
		03R301	Solvent recovery	Process Eq	68H001/68H002
		05VA534	Solvent recovery	Process Eq	68H001/68H002
		05V579	Solvent recovery	Process Eq	68H001/68H002
		05C505	Solvent recovery	Process Eq	68H001/68H002
		05V580	Solvent recovery	Process Eq	68H001/68H002
04	Luxus 2 from Luxus 5	03R302B	Reactor	Process Eq	68H001/68H002
		03R307	Mixing vessel	Process Eq	68H001/68H002
		03V326	Wastewater tank	Process Eq	N.R
		03R304	Distillation	Process Eq	68H001/68H002
		03R306/C307	Vacuum distillation via K305 or K309	Process Eq	68H001/68H002
		03R306/C307	Vacuum distillation via jet vac	Process Eq	N.R
	Luxus 5	03R307	Mixing vessel	Process Eq	N/A[1]
		03R302B	Reactor	Process Eq	N/A[1]
		03FP401	Filtration	Process Eq	N/A[1]
		02D130	Drying	Process Eq	N/A[1]
		03V358	Solvent recovery	Storage tank	01CE01/01CE02
		03C305	Solvent recovery	Process Eq	N/A[1]
		03V375	Solvent recovery	Process Eq	N/A[1]
		03V376	Solvent recovery	Process Eq	N/A[1]
	Tabanol 5	03R350	Reactor	Process Eq	N/A[1]
		03V352	Weigh vessel	Process Eq	N/A[1]
		02D130	Drying	Process Eq	N/A[1]

		02D131	Drying	Process Eq	N/A[1]
	Tabanol NA (1)	02R151	Reaction	Process Eq	68H001/68H002
		02D131	Drying	Process Eq	68H001/68H002
		03V375	Solvent recovery	Process Eq	68H001/68H002
		03C305	Solvent recovery	Process Eq	68H001/68H002
		03V376	Solvent recovery	Process Eq	68H001/68H002
	Tabanol NA (2)	03R301	Reaction	Process Eq	68H001/68H002
		02D131	Drying	Process Eq	68H001/68H002
		03V375	Solvent recovery	Process Eq	68H001/68H002
		03C305	Solvent recovery	Process Eq	68H001/68H002
		03V376	Solvent recovery	Process Eq	68H001/68H002
	Unox 3	03R308	Reaction	Process Eq	68H001/68H002
		03R306	Distillation	Process Eq	68H001/68H002
		05V579	Solvent recovery	Process Eq	N.R
		05C505	Solvent recovery	Process Eq	68H001/68H002
		05V580	Solvent recovery	Process Eq	N.R.
	51MT Production	05V577	Solvent recovery	Process Eq	68H001/68H002
		05C504	Solvent recovery	Process Eq	68H001/68H002
		05V578	Solvent recovery	Process Eq	68H001/68H002
05	Tabanol 5 (1)	04R402	Reactor	Process Eq	N/A[1]
		04D402	Dryer	Process Eq	N/A[1]
		04VA405	Mixing vessel	Process Eq	N/A[1]
	Tabanol 5 (2)	04R403	Reactor	Process Eq	N/A[1]
		04D405	Dryer	Process Eq	N/A[1]
		04D406	Dryer	Process Eq	N/A[1]
		04VA406	Mixing vessel	Process Eq	N/A[1]
	Tabanol 5 (3)	04R406	Reactor	Process Eq	N/A[1]
		04D401	Dryer	Process Eq	N/A[1]
		04VA409	Mixing vessel	Process Eq	N/A[1]
06	Efram CR (1)	05R520	Reactor	Process Eq	68H001/68H002
	Efram CR (2)	05R521	Reactor	Process Eq	68H001/68H002
	Efram CR	05R523	Reactor	Process Eq	68H001/68H002

	(3)				
	Efram CR (All)	05VA524	Mixing vessel	Process Eq	68H001/68H002
	Efram CR (All)	05V542	Charge vessel	Process Eq	68H001/68H002
	Efram CR (All)	05V543	Weigh vessel	Process Eq	68H001/68H002
	Efram CR (All)	05V563	Weigh vessel	Process Eq	68H001/68H002
	Tabanol 1	05R522	Reactor	Process Eq	68H001/68H002
		05VA522	Mixing vessel	Process Eq	68H001/68H002
		05VA525	Mixing vessel	Process Eq	68H001/68H002
	Tabanol 2	05R522	Reactor	Process Eq	68H001/68H002
		05VA522	Mixing vessel	Process Eq	68H001/68H002
		05VA525	Mixing vessel	Process Eq	68H001/68H002
		05VA526	Mixing vessel	Process Eq	68H001/68H002
07	Tabanol 5 (1)	05R501	Reactor	Process Eq	N/A[1]
		05D501	Dryer	Process Eq	N/A[1]
		05V504	Mixing vessel	Process Eq	N/A[1]
	Tabanol 5 (2)	05R502	Reactor	Process Eq	N/A[1]
		05D502	Dryer	Process Eq	N/A[1]
		05V506	Mixing vessel	Process Eq	N/A[1]
	Tabanol 5 (3)	05R503	Reactor	Process Eq	N/A[1]
		05D503	Dryer	Process Eq	N/A[1]
		05V512	Mixing vessel	Process Eq	N/A[1]

1. This equipment is connected to process condensers 01CE01 & 01CE02.

ATTACHMENT G

Equipment Leak Information Requirements

Section 7.1 (63.1039(a)(1)): Tables 7.1, 7.2 and 7.3 contain the information requested in section 63.1039(a)(1)(i-iv)

Table 7.1. Subpart UU Compliance Information For Pumps

MCPU	Process	No. Pumps	Method	Schedule
04	Efram CR	2	Method 21	Monthly
	Elphos ET	26	Method 21	Monthly
	Extrapin	1	Method 21	Monthly
	Luxus 1	7	Method 21	Monthly
	Luxus 2 from Luxus 5	3	Method 21	Monthly
	Luxus 5	6	Method 21	Monthly
	Tabanol NA	2	Method 21	Monthly
	Unox 3	1	Method 21	Monthly
	51MT from the Tabanol 2 process	4	Method 21	Monthly
05	Tabanol 5	10	Method 21	Monthly
06	Efram CR, Tabanol 1 and Tabanol 2	6	Method 21	Monthly
07	Tabanol 5	6	Method 21	Monthly
	Storage tanks	22	Method 21	Monthly
	Storage tanks	10	Visual inspection	Monthly

Table 7.2. Subpart UU Compliance Information For Agitators

MCPU	Process	No. Agitators	Method	Schedule
04	Efram CR	2	Method 21	Monthly
	Elphos ET	12	Method 21	Monthly
	Extrapin	2	Method 21	Monthly
	Luxus 1	5	Method 21	Monthly
	Luxus 2 from Luxus 5	4	Method 21	Monthly
	Luxus 5	6	Method 21	Monthly
	Tabanol NA	1	Method 21	Monthly
	Unox 3	2	Method 21	Monthly
	51MT from the Tabanol 2 process	1	Method 21	Monthly
05	Tabanol 5	6	Method 21	Monthly
06	Efram CR, Tabanol 1 and Tabanol 2	7	Method 21	Monthly
07	Tabanol 5	6	Method 21	Monthly

Table 7.3. Subpart UU Compliance Information For Valves

MCPU	Process	No. Valves	Method	Schedule
04	Efram CR	64	Method 21	Annually
	Elphos ET	*	Method 21	Monthly by campaign
	Extrapin	*	Method 21	Monthly by campaign
	Luxus 1	65	Method 21	Monthly by campaign
	Luxus 2 from Luxus 5	*	Method 21	Monthly by campaign
	Luxus 5	*	Method 21	Monthly by campaign
	Tabanol NA	23	Method 21	Monthly by campaign
	Unox 3		Method 21	Monthly by campaign
	51MT from the Tabanol 2 process	40	Method 21	Annually
05	Tabanol 5	253	Method 21	Annually
06	Efram CR, Tabanol 1 and Tabanol 2	200	Method 21	Annually
07	Tabanol 5	123	Method 21	Annually
	Storage tanks	283	Method 21	Annually
	Storage tanks	97	Visual	Annually

Note: A leak rate for the first three months was 0.4%. However, with exception to Efram CR and 51MT, processes within Unit ID 04 change campaign and it is not convenient to calculate a leak rate to specify a frequency at this time. Leaks will be checked monthly until all processes have been checked. *Information to be compiled before first campaign.

Subpart UU Compliance Information For Connectors

In accordance with 63.2480(b)(3) the facility will comply with the requirements of 63.1029 instead of 63.1027 for connectors in gas vapor/light liquid service. If a leak is determined by visible, audible, olfactory or any other means it will be repaired or tested in accordance with Method 21 within 5 days.

Subpart UU Compliance Information For Pressure Relief Devices

After a pressure relief device in gas vapor service is actuated, it will be monitored in accordance with Method 21 within 5 days to confirm the concentration is less than 500 ppm.

Section 7.2 (63.1039(a)(2)): Table 7.4 contains the information requested in section 63.1039(a)(2)(i-ii)

Table 7.4. Processes Which Will Be Subject to Pressure Testing per 63.1036(b)

MCPU	Process	Equipment ID	Schedule
04	Efram CR	02R210, 02VA210, 02V212,02V213,02V215	Annually
	Elphos ET	03R301, 03V380, 03R305, 03R150, 03VA305, 03FP305, 03SE301, 03V313B, 03FP303, 03V322, 03V324B, 02TK111, 05V575 & 05V576, 05VA534 & 05C503	Each campaign
	Extrapin	02R102,03VA351	Each campaign
	Luxus 1	03R301, 03R302A, 03SE301, 03V324A, 03V324B, 05V579, 05V580, 05VA534/05C505	Each campaign
	Luxus 2 from Luxus 5	03R302B, 03R307, 03R304, 03R306/C307	Each campaign
	Luxus 5	03R307, 03R302B, 03FP401, 02VA112, 03V358	Each campaign
	Tabanol NA	02R151, 03V375, 03C305, 03V376	Each campaign
	Unox 3	03R308, 03R306	Each campaign
	51MT from the Tabanol 2 process	05C504,05V577, 05V578	Annually
05	Tabanol 5	04R402, 04R403, 04R406	Annually
06	Efram CR, Tabanol 1 and Tabanol 2	05R520, 05R521, 05R523, 05VA524, 05R522	Annually
07	Tabanol 5	05R501, 05R502, 05R503	Annually
Note: Due to scheduling conflicts, when a vessel listed for pressure testing is not pressure tested at the beginning of a campaign in Unit ID 04 the agitator, valves and connections will be monitored by Method 21 per the schedule listed in the tables above.			

Section 7.3. (63.1039(a)(3)): There are no units subject to the requirements of 63.1037 at the facility.

ATTACHMENT H

Documentation for Compliance with 63.2485(n) for Wastewater for Soluble HAP

All wastewater streams that are Group 1 for PSHAP are treated in steam stripper 03C303 which reduces the concentration of PSHAP (methylene chloride and xylene) below 50 ppmw (or alternatively < 1,000 kg/yr). However, the concentration of SHAP (methanol) after treatment in 03C303 is greater than 50 ppmw. Because methanol is readily biodegradable and other non-HAP biodegradable constituents may be present in the treated Group 1 wastewater streams, the streams exiting the stripper are sent to the facility biological treatment plant. As a result a separate compliance option utilizing the biological treatment plant must be used for these streams.

Paragraph 63.2485(n) allows for streams that are group 1 for both SHAP and PSHAP or SHAP alone to meet a 90% destruction efficiency of the total HAP in the biological treatment plant using fraction biodegraded (f_{bio}). Paragraph 63.2485(n)(4) allows for a separate compliance options for PSHAP and SHAP streams. Although there are no Group 1 SHAP streams at the facility, it seems that this option should be available for separately managing the Group 2 methanol wastewater streams.

Air emissions are counted against the destruction efficiency. f_{bio} must be calculated according to the methods in 63.145(h).

Criteria to meet/consider:

- All transfers at the biological treatment plant are hard piped except an overflow between 99VA104 and 99R101 and the overflows from reactors to the clarifiers and from the clarifiers to the discharge.
- The biological reactors at the facility meet the definition of "enhanced biological treatment system".
- Less than 99% of the HAP entering the biological treatment system.

Methodology followed:

1. EPA model WATER9 was set up for two wastewater treatment lines which treat a different mix of wastewater entering the WWTP. The R101 system contains a mixing vessel, VA104, followed by three biological reactors in series R101, R102, and R202 and a clarifier SD201. The R301 system consists of mixing vessel, VA105, followed by one biological reactor (R301) and a degassing unit R201 and a clarifier SD301. Two separate models were developed and executed with loading data collected from 2009. Addendum 1 contains WATER9 output reports including process flow diagrams for both systems, summary report III showing total component HAP air emissions from the system tanks, mixing vessels, aeration units, clarifers, etc., and individual unit data for the simulations, and a page containing the inlet loading conditions for each line. The model was used to calculate HAP air emissions from the treatment plant and to obtain mass transfer coefficients used in f_{bio} calculations later described.

2. Form III of Appendix C of part 63 was used to calculate f_{bio}. In accordance with 63.145(h)(2)(i) Table 37 of Subpart G must be used to determine K1, since the facility does not meet the 99% list 1 of Table 36 of Subpart G compounds criteria of 63.145(1)(ii). Based upon 2009 data methanol accounts for 98% of the total HAP's entering the biological treatment plant. For methanol that value of K1 is 0.2. The

overall mass transfer coefficient, KL, was obtained from WATER 9. Form III's for both treatment lines are provided in Addendum 2.

3. Equation 1 of 63.2485 was used to calculate the destruction efficiency. The required efficiency is 90%. The results clearly demonstrate this has been attained. Addendum 3 contains the details of that calculation.

ADDENDUM 1
WATER9 DATA

ADDENDUM 2
Part 63 Appendix C Form III's

ADDENDUM 3
EQUATION 1 OF 63.2485